



Exhibit 2

Charted claims

Non-Method claim: 1

US8788362B2	Square Point of Sale app ("The Accused Product")
<p>1. A system for processing a wireless request over a network based on a human-perceptible advertisement for advertising to consumers a product or service offered by a vendor, the advertisement associated with at least one radio frequency identification (RFID) tag, the at least one RFID tag being configured to transmit a wireless identification transmission signal</p>	<p>The accused product discloses a system (e.g., contactless payments) for processing a wireless request (e.g., payment request) over a network based on a human-perceptible advertisement (e.g., informing to accept payments from any contactless card or mobile wallet from their NFC-enabled device) for advertising to consumers a product or service offered by a vendor (e.g., client site, boutique, farm stand, etc.), the advertisement (e.g., informing to accept payments from any contactless card or mobile wallet from their NFC-enabled device) associated with at least one radio frequency identification (RFID) tag (e.g., NFC tag on a contactless card), the at least one RFID tag (e.g., NFC tag on a contactless card) being configured to transmit a wireless identification transmission signal (e.g., tag responds with the requested information corresponding to a prompt for inputting a PIN) representing information pertaining to the product or service offered by a vendor (e.g., client site, boutique, farm stand, etc.).</p> <p>As shown below, Square Point of sale app is a payment system used to receive payments. Square Point of sale app has tap to pay on iPhone that uses Near Field Communication (NFC) technology wherein a user can Pay with your NFC-enabled contactless card to an iPhone which can accept payments. The iPhone is equipped with Square Point of sale software for reading a human-perceptible advertisement for advertising a product or service offered by a vendor. The RFID tag (e.g., contactless card) transmits a wireless identification transmission signal (e.g., tag responds with the requested information) in response to the product or service offered by a vendor (e.g., client site, boutique, farm stand, etc.).</p>

representing information pertaining to the product or service offered by a vendor, the system comprising:


 [Products](#) [Business Types](#) [Why Square?](#) [Pricing](#) [Resources](#) [Sign In](#) [Support](#) [Shop](#) 

Square Point of Sale [Overview](#) [Demo](#) [Pricing](#) [Features](#) [Get started](#) [Contact sales](#)

Square Point of Sale

Power your business with flexible POS software.

[Get started](#) [Contact sales](#)



<https://squareup.com/us/en/point-of-sale/software>

Accept contactless cards, Apple Pay,
and other digital wallets in person with
Tap to Pay on iPhone. Available on iPhone
XS or above running iOS 15.5 or later.

<https://squareup.com/us/en/payments/tap-to-pay>

Tap to Pay on iPhone

Overview Accepting Payments Marketing Guidelines

Tap to Pay on iPhone is currently available in the United States, Taiwan, Australia, United Kingdom, Netherlands, Brazil, Ukraine, and France. The following payment service providers (PSP) support Tap to Pay on iPhone.

United States

- [Adyen \(SDK\)](#)
- [Square](#)
- [Stripe \(SDK\)](#)
- [GoDaddy](#)
- [Clover from Fiserv \(SDK\)](#)
- [Zettle by PayPal](#)
- [Chase](#)
- [IPOS Systems](#)
- [North American Bancard](#)
- [Worldpay from FIS \(Coming soon\)](#)

Australia

- [Westpac](#)
- [Tyro](#)
- [Stripe \(SDK\)](#)
- [ANZ Worldline](#)

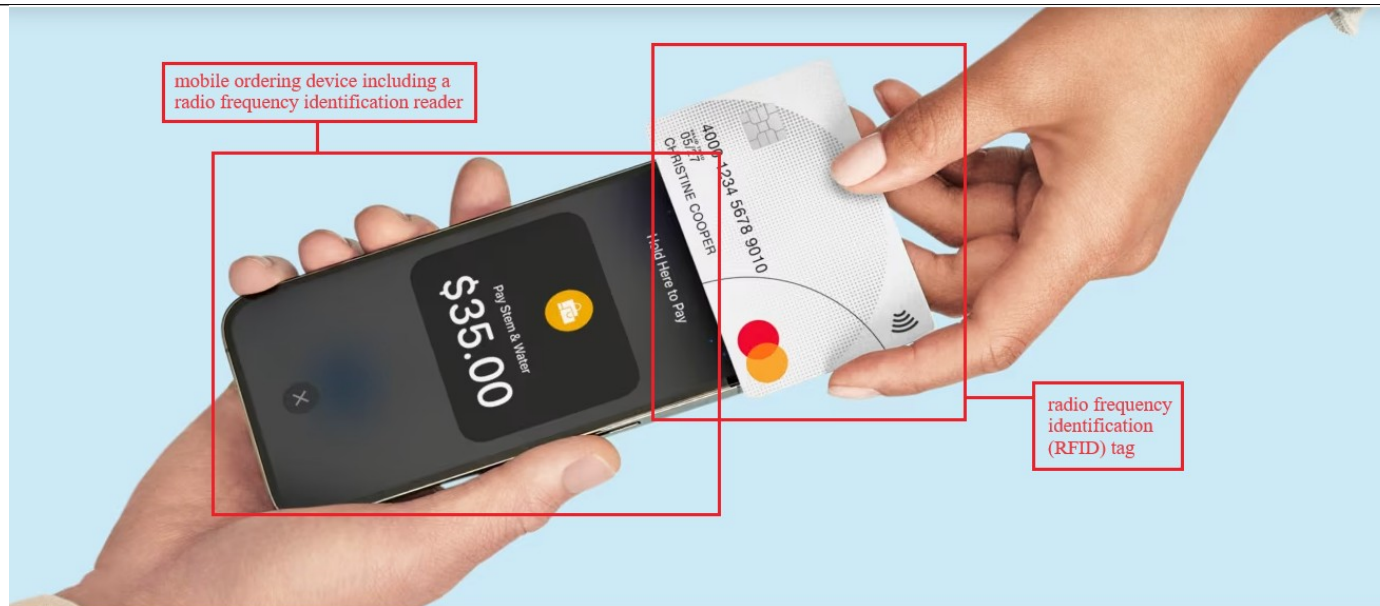
Taiwan

- [CTBC Bank](#)
- [TapPay \(SDK\)](#)
- [Taipei Fubon Bank](#)
- [Global Payments](#)
- [Taishin Bank](#)

United Kingdom

- [Tyl by NatWest](#)
- [Revolut](#)
- [Viva Wallet](#)
- [Dojo](#)

<https://developer.apple.com/tap-to-pay/>



<https://squareup.com/us/en/payments/tap-to-pay>

6Lo Working Group
Internet-Draft
Intended status: Standards Track
Expires: 25 April 2023

Y. Choi, Ed.
ETRI
Y-G. Hong
Daejeon Univ.
J-S. Youn
Dongueui Univ.
D-K. Kim
KNU
22 October 2022

Transmission of IPv6 Packets over Near Field Communication
draft-ietf-6lo-nfc-18

Abstract

Near Field Communication (NFC) is a set of standards for smartphones and portable devices to establish radio communication with each other by touching them together or bringing them into proximity, usually no more than 10 cm apart. NFC standards cover communications protocols and data exchange formats, and are based on existing radio-frequency identification (RFID) standards including ISO/IEC 14443 and FeliCa. The standards include ISO/IEC 18092 and those defined by the NFC Forum. The NFC technology has been widely implemented and available in mobile phones, laptop computers, and many other devices. This document describes how IPv6 is transmitted over NFC using 6LoWPAN techniques.

<https://www.ietf.org/archive/id/draft-ietf-6lo-nfc-18.txt>

Near Field Communication Technology Standards

When developing near field communication devices and new technology, NFC standards must be met. Standards exist to ensure all forms of near field communication technology can interact with other NFC compatible devices and will work with newer devices in the future. Two major specifications exist for NFC technology: ISO/IEC 14443 and ISO/IEC 18000-3. The first defines the ID cards used to store information, such as that found in NFC tags. The latter specifies the RFID communication used by NFC devices.

ISO/IEC 18000-3 is an international standard for all devices communicating wirelessly at the 13.56MHz frequency using Type A or Type B cards, as near field communication does. The devices must be within 4cm of each other before they can transmit information. The standards explain how a device and the NFC tag it is reading should communicate with one another. The device is known as the interrogating device while the NFC tag is simply referred to as the tag.

<http://nearfieldcommunication.org/technology.html>

The two devices create a high frequency magnetic field between the loosely coupled coils in both the interrogating device and the NFC tag. Once this field is established, a connection is formed and information can be passed between the interrogator and the tag. The interrogator sends the first message to the tag to find out what type of communication the tag uses, such as Type A or Type B. When the tag responds, the interrogator sends its first commands in the appropriate specification.

The tag receives the instruction and checks if it is valid. If not, nothing occurs. If it is a valid request, the tag then responds with the requested information. For sensitive transactions such as credit card payments, a secure communication channel is first established and all information sent is encrypted.

NFC tags function at half duplex while the interrogator functions at full duplex. Half duplex refers to a device that can only send or receive, but not both at once. Full duplex can do both simultaneously. A NFC tag can only receive or send a signal, while the interrogating device can receive a signal at the same time it sends a command. Commands are transmitted from the interrogator using PJM (phase jitter modulation) to modify the surrounding field and send out a signal. The tag answers using inductive coupling by sending a charge through the coils in it. Meeting these specifications ensures all NFC devices and tags can communicate effectively with one another.

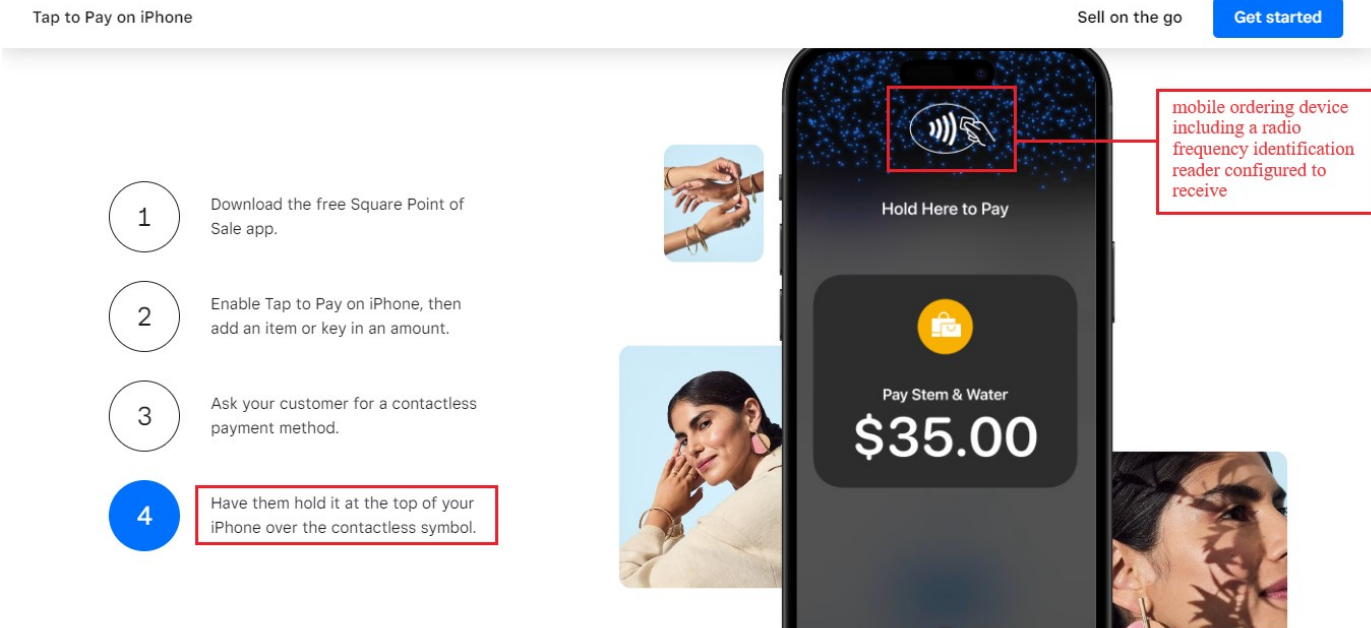
<http://nearfieldcommunication.org/technology.html>

ISO/IEC 18000-63:2013 specifies the physical and logical requirements for a passive-backscatter, Interrogator-Talks-First (ITF) systems. The system comprises Interrogators, also known as readers, and tags, also known as labels. An Interrogator receives information from a tag by transmitting a continuous-wave (CW) RF signal to the tag; the tag responds by modulating the reflection coefficient of its antenna, thereby backscattering an information signal to the Interrogator. The system is ITF, meaning that a tag modulates its antenna reflection coefficient with an information signal only after being directed to do so by an Interrogator.

ISO/IEC 18000-63:2013 contains Type C.

Type C uses PIE in the forward link and a random slotted collision-arbitration algorithm.

ISO/IEC 18000-63:2013 specifies
<https://www.iso.org/standard/59643.html>

	<p>Tap to Pay on iPhone</p> <p>Sell on the go Get started</p>  <p>1 Download the free Square Point of Sale app.</p> <p>2 Enable Tap to Pay on iPhone, then add an item or key in an amount.</p> <p>3 Ask your customer for a contactless payment method.</p> <p>4 Have them hold it at the top of your iPhone over the contactless symbol.</p> <p>https://squareup.com/us/en/payments/tap-to-pay</p>
<p>a mobile ordering device including a radio frequency identification reader configured to receive from the at least one RFID tag the wireless</p>	<p>The accused product discloses a mobile ordering device (e.g., NFC-enabled device) including a radio frequency identification reader (e.g., NFC reader on the device) configured to receive from the at least one RFID tag (e.g., NFC tag on a contactless card) the wireless identification transmission signal (e.g., tag responds with the requested information corresponding to a prompt for inputting a PIN) corresponding to the advertisement (e.g., informing to accept payments from any contactless card or mobile wallet from their NFC-enabled device) and representing information pertaining to the product or service offered by the vendor (e.g., client site, boutique, farm stand, etc.).</p> <p>As shown below, Square Point of sale app is a payment system used to receive payments. Square Point of sale app has tap to pay on iPhone that uses Near Field Communication (NFC)</p>

identification transmission signal corresponding to the advertisement and representing information pertaining to the product or service offered by the vendor,

technology wherein a user can Pay with your NFC-enabled contactless card to an iPhone which can accept payments. Initial connection setup is established through a radio frequency network wherein tag receives the instruction from the NFC Interrogator/reader or radio frequency identification reader (e.g., NFC antenna area) and checks if it is valid. If it is a valid request, the tag then responds with the requested information. This information, received by the reader on the NFC-enabled device corresponds to a prompt for inputting a PIN.



<https://squareup.com/us/en/payments/tap-to-pay>

Does Tap to Pay on iPhone support transactions that require a PIN? ×

Tap to Pay on iPhone allows payment service providers to enable PIN-based transactions in iOS 16.0 and later.

After the customer taps their card, Tap to Pay on iPhone prompts the customer to enter their PIN using Apple's secure PIN entry interface

the wireless identification transmission signal

Ask your payment service provider if they support PIN-based transactions in your payment application.

<https://register.apple.com/tap-to-pay-on-iphone/faq/>

Near Field Communication Technology Standards

When developing near field communication devices and new technology, NFC standards must be met. Standards exist to ensure all forms of near field communication technology can interact with other NFC compatible devices and will work with newer devices in the future. Two major specifications exist for NFC technology: ISO/IEC 14443 and ISO/IEC 18000-3. The first defines the ID cards used to store information, such as that found in NFC tags. The latter specifies the RFID communication used by NFC devices.

ISO/IEC 18000-3 is an international standard for all devices communicating wirelessly at the 13.56MHz frequency using Type A or Type B cards, as near field communication does. The devices must be within 4cm of each other before they can transmit information. The standards explain how a device and the NFC tag it is reading should communicate with one another. The device is known as the interrogating device while the NFC tag is simply referred to as the tag.

<http://nearfieldcommunication.org/technology.html>

The two devices create a high frequency magnetic field between the loosely coupled coils in both the interrogating device and the NFC tag. Once this field is established, a connection is formed and information can be passed between the interrogator and the tag. The interrogator sends the first message to the tag to find out what type of communication the tag uses, such as Type A or Type B. When the tag responds, the interrogator sends its first commands in the appropriate specification.

The tag receives the instruction and checks if it is valid. If not, nothing occurs. If it is a valid request, the tag then responds with the requested information. For sensitive transactions such as credit card payments, a secure communication channel is first established and all information sent is encrypted.

NFC tags function at half duplex while the interrogator functions at full duplex. Half duplex refers to a device that can only send or receive, but not both at once. Full duplex can do both simultaneously. A NFC tag can only receive or send a signal, while the interrogating device can receive a signal at the same time it sends a command. Commands are transmitted from the interrogator using PJM (phase jitter modulation) to modify the surrounding field and send out a signal. The tag answers using inductive coupling by sending a charge through the coils in it. Meeting these specifications ensures all NFC devices and tags can communicate effectively with one another.

a radio frequency identification reader configured to receive

<http://nearfieldcommunication.org/technology.html>

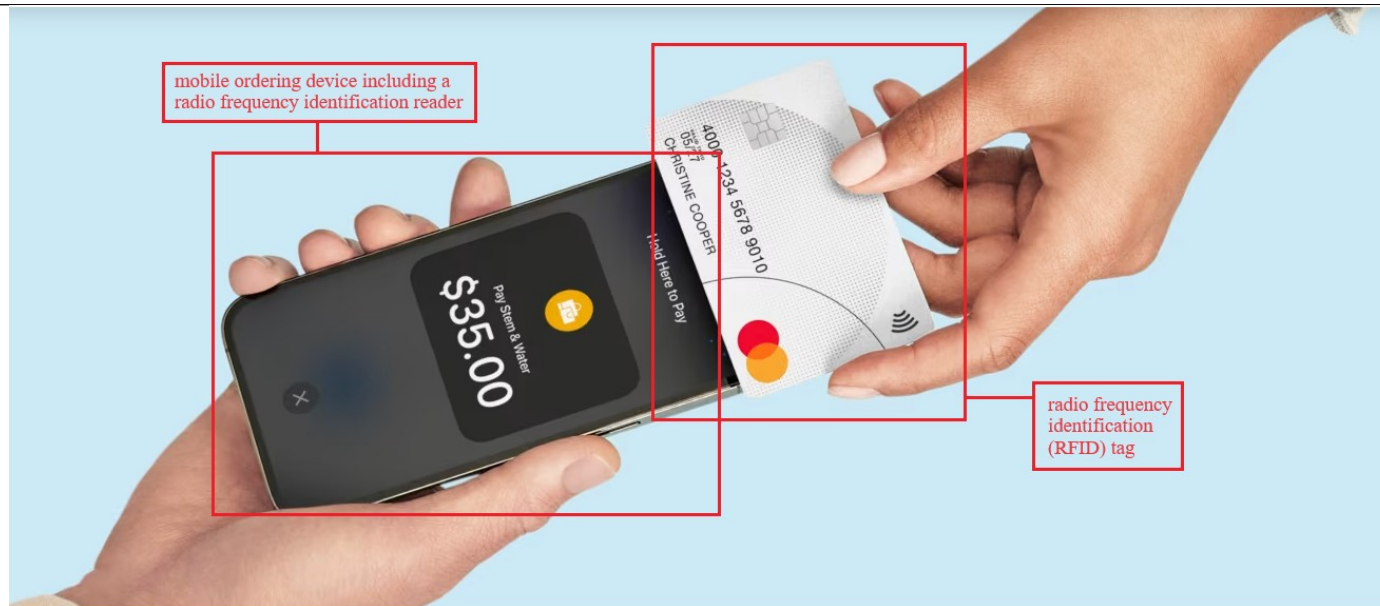
	<p>ISO/IEC 18000-63:2013 specifies the physical and logical requirements for a passive-backscatter, Interrogator-Talks-First (ITF) systems. The system comprises Interrogators, also known as readers, and tags, also known as labels. An Interrogator receives information from a tag by transmitting a continuous-wave (CW) RF signal to the tag; <u>the tag responds by modulating the reflection coefficient of its antenna, thereby backscattering an information signal to the Interrogator.</u> The system is ITF, meaning that a tag modulates its antenna reflection coefficient with an information signal only after being directed to do so by an Interrogator.</p> <p>ISO/IEC 18000-63:2013 contains Type C.</p> <p>Type C uses PIE in the forward link and a random slotted collision-arbitration algorithm.</p> <p>ISO/IEC 18000-63:2013 specifies https://www.iso.org/standard/59643.html</p>
the mobile ordering device configured to accept input from a consumer, generate an electronic transaction order pertaining	<p>The accused product discloses the mobile ordering device (e.g., NFC-enabled device) configured to accept input (e.g., customer enters PIN) from a consumer, generate an electronic transaction order (e.g., payment request) pertaining to the advertisement (e.g., informing to accept payments from any contactless card or mobile wallet from their NFC-enabled device) with the information from the wireless identification transmission signal (e.g., tag responds with the requested information corresponding to a prompt for inputting a PIN), communicate the transaction order (e.g., payment request) to a commerce data system (e.g., payments from any contactless card or mobile wallet) over a network, and communicate an identifier (e.g., receipt Number) associated with the consumer to the commerce data system (e.g., payments from any contactless card or mobile wallet).</p>

to the advertisement with the information from the wireless identification transmission signal, communicate the transaction order to a commerce data system over a network, and communicate an identifier associated with the consumer to the commerce data system,

As shown below, Square Point of sale app is a payment system used to receive payments. Square Point of sale app has tap to pay on iPhone that uses Near Field Communication (NFC) technology wherein a user can Pay with your NFC-enabled contactless card to an iPhone which can accept payments. The NFC-enabled iPhone is configured to accept a PIN as an input after the contactless card is tapped on the phone. Once the input is received, the device requests payment from the commerce system in the form of a transaction order.

Accept contactless cards, Apple Pay,
and other digital wallets in person with
Tap to Pay on iPhone. Available on iPhone
XS or above running iOS 15.5 or later.

<https://squareup.com/us/en/payments/tap-to-pay>



<https://squareup.com/us/en/payments/tap-to-pay>

Tap to Pay on iPhone

Overview Accepting Payments Marketing Guidelines

Tap to Pay on iPhone is currently available in the United States, Taiwan, Australia, United Kingdom, Netherlands, Brazil, Ukraine, and France. The following payment service providers (PSP) support Tap to Pay on iPhone.

United States

- [Adyen \(SDK\)](#)
- [Square](#)
- [Stripe \(SDK\)](#)
- [GoDaddy](#)
- [Clover from Fiserv \(SDK\)](#)
- [Zettle by PayPal](#)
- [Chase](#)
- [IPOS Systems](#)
- [North American Bancard](#)
- [Worldpay from FIS \(Coming soon\)](#)

Taiwan

- [CTBC Bank](#)
- [TapPay \(SDK\)](#)
- [Taipei Fubon Bank](#)
- [Global Payments](#)
- [Taishin Bank](#)

Australia

- [Westpac](#)
- [Tyro](#)
- [Stripe \(SDK\)](#)
- [ANZ Worldline](#)

United Kingdom

- [Tyl by NatWest](#)
- [Revolut](#)
- [Viva Wallet](#)
- [Dojo](#)

<https://developer.apple.com/tap-to-pay/>

Does Tap to Pay on iPhone support transactions that require a PIN?

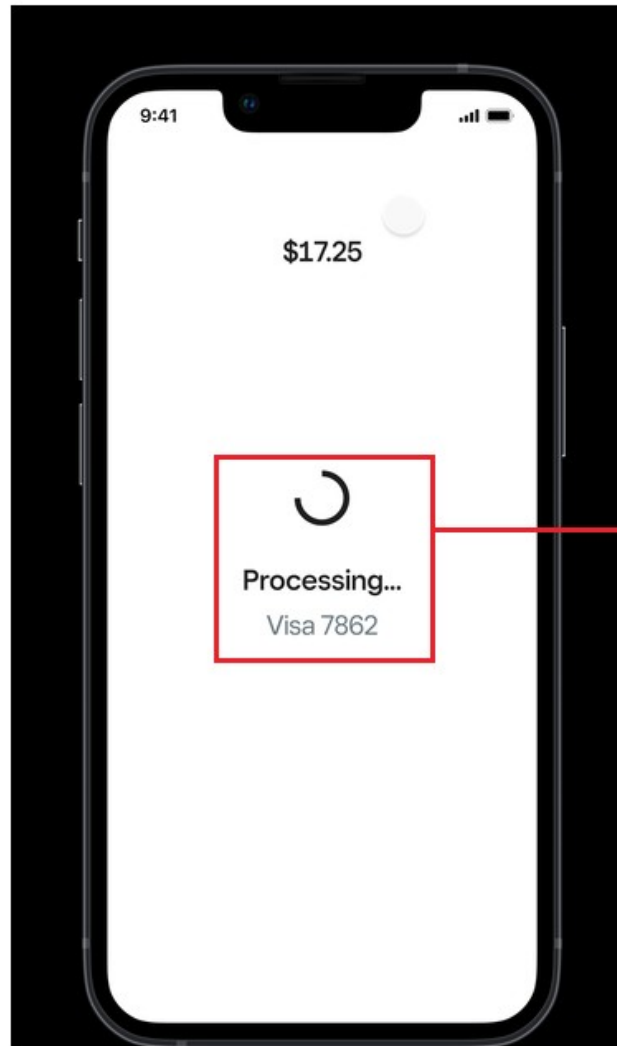
✕

Tap to Pay on iPhone allows payment service providers to enable PIN-based transactions in iOS 16.0 and later.

After the customer taps their card, Tap to Pay on iPhone prompts the customer to enter their PIN using Apple's secure PIN entry interface.

Ask your payment service provider if they support PIN-based transactions in your payment application.

<https://register.apple.com/tap-to-pay-on-iphone/faq/>

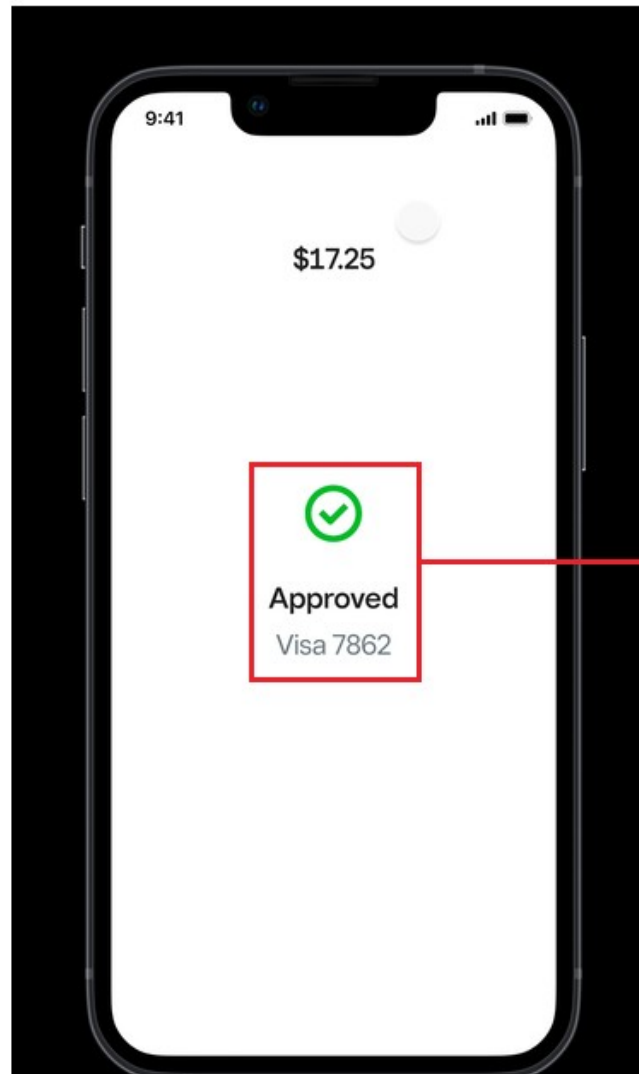


communicate the
transaction order
to a commerce
data system

<https://squareup.com/help/us/en/article/7786-get-started-with-tap-to-pay-on-iphone>

	<h2><u>View Your Transaction History from the App</u></h2> <p><u>To view individual transaction details:</u></p> <ol style="list-style-type: none"> 1. From the navigation bar at the bottom of your screen, tap More. 2. Tap <u>Transactions</u>. 3. Tap individual payments to view transaction details. <p><u>If the customer paid with a payment card, you'll see the following:</u></p> <ul style="list-style-type: none"> • <u>Payment card brand and last 4 digits</u> • <u>Receipt number</u> • <u>Date of the payment</u> • <u>Tax</u> • <u>Item(s) sold</u> • Notes <p>https://squareup.com/help/us/en/article/5381-in-app-summaries-and-reports</p>
the mobile ordering device in communication with the	The accused product discloses the mobile ordering device (e.g., NFC-enabled device) in communication with the commerce data system (e.g., payments from any contactless card or mobile wallet), the commerce data system (e.g., payments from any contactless card or mobile wallet) for receiving and processing the request (e.g., payment request) of the mobile ordering device (e.g., NFC-enabled device) across the network, and responding to the request

<p>commerce data system, the commerce data system for receiving and processing the request of the mobile ordering device across the network, and responding to the request by sending information to the mobile ordering device via the network, the information associated with the wireless identification transmission signal;</p>	<p>(e.g., payment request) by sending information (e.g., acknowledgement in the form of Done or a checkmark on the display screen) to the mobile ordering device (e.g., NFC-enabled device) via the network, the information (e.g., acknowledgement in the form of Done or a checkmark on the display screen) associated with the wireless identification transmission signal.</p> <p>The NFC-enabled iPhone sends a request to the commerce data system after the consumer inputs a pin for authenticating the transaction. The commerce data system processes the request and sends information regarding the payment back to the device in the form of an acknowledgement signal that includes a check mark on the display with an option to send a receipt of the transaction to the consumer.</p> <ol style="list-style-type: none"> 2. Tap Review Sale > Charge. 3. Select Tap to Pay on iPhone and position your phone close to your customer. Have them either hold their card horizontally over the contactless symbol or hold any NFC-type devices (like Apple Pay, Google Pay, Apple Watch, etc.) to the front of the phone. <ol style="list-style-type: none"> 1. If the payment times out before it's processed, tap Try Again. 4. <u>Once the payment is complete, have your customer choose their desired receipt method.</u> <p>https://squareup.com/help/us/en/article/7786-get-started-with-tap-to-pay-on-iphone</p>
---	--



responding to the
request by sending
information to the
mobile ordering
device

<https://squareup.com/help/us/en/article/7786-get-started-with-tap-to-pay-on-iphone>

wherein the commerce system maintains account information associated with the identifier, the account information including transaction details of the transaction order

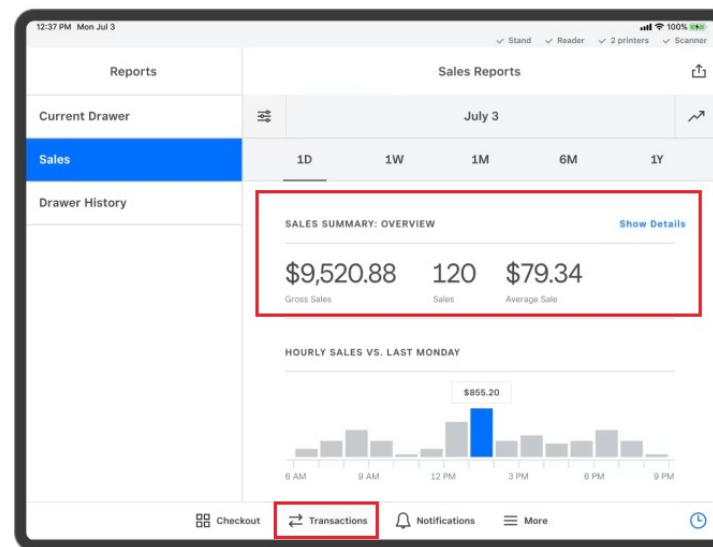
The accused product discloses a system wherein the commerce system (e.g., payments from any contactless card or mobile wallet) maintains account information (e.g., payment card brand and last 4 digits) associated with the identifier (e.g., receipt Number), the account information (e.g., payment card brand and last 4 digits) including transaction details (e.g., transaction history i.e. Date of Payment, Item Sold, Tax etc.) of the transaction order (e.g., payment request).

The NFC-enabled device can further check the transaction history of the account for analysis. The transaction history includes the account information and daily sales data which can be used to analyze the sales patterns of the vendor.

Make informed business decisions.

Gain valuable insights about your business with sales reports that break down your sales, products, and customers from your Square POS system.

- ✓ Know what's selling best, view your bottom line, and keep a pulse on your business.
- ✓ See how much your average customers spend and who is new to your business.
- ✓ View sales and track your business online, on your phone, or from the Square Point of Sale app.



<https://squareup.com/us/en/point-of-sale/software#panel-reporting--1viHrj3wwLm2QnnfKVPoLx>

[Home](#) > [Payment History & Reporting](#)

In-App Summaries and Reports

Confirm and review your sales history, transactions details, and reports directly from the Square app.

View Sales Reporting from the Square App

From the Square Point of Sale (POS) app, Register, and Terminal, you can generate, print, and email sales reports. If you're using [Team Management](#), you can choose which sales data your team has access to by granting them access to either detailed or limited sales reporting.

Detailed Sales Reporting: Allow team members to view aggregate sales data on a shared point of sale or your online Square Dashboard for only the past 90 days, and restricts team members from seeing full historical data, comparison charts, and trends over time.

<https://squareup.com/help/us/en/article/5381-in-app-summaries-and-reports>

View Your Transaction History from the App

To view individual transaction details:

1. From the navigation bar at the bottom of your screen, tap **More**.
2. Tap Transactions.
3. Tap individual payments to view transaction details.

If the customer paid with a payment card, you'll see the following:

- Payment card brand and last 4 digits
- Receipt number
- Date of the payment
- Tax
- Item(s) sold
- Notes

<https://squareup.com/help/us/en/article/5381-in-app-summaries-and-reports>